

APPLICATION FOR PATENT

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MOBILE COMMUNICATIONS DEVICE TO BE WORN ON THE  
WRIST HAVING FLEXIBLE BATTERY STRAP

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## Background of the Invention

Mobile telephones and similar communication  
5 devices are becoming more compact and can be stored in  
a pocket, purse, and myriad other places. Such  
devices have become so small; that they have become  
inconspicuous and can be easily misplaced. One  
common approach is to incorporate a cellular  
10 telephone, pager, or other communications device  
within a wristwatch to provide a dual function device.  
This has at least one advantage in that the mobile  
communications device is kept on the wrist and cannot  
easily be lost. Many of the designs of such "wrist  
15 phones", however are awkward and are of limited  
usefulness as a phone. It is a purpose of this  
invention to provide a simple mobile communications  
device which can be comfortably kept on the wrist and  
which is capable of providing a full function  
20 communications device.

## Summary of the Invention

The mobile communications device of this  
invention is designed to be kept on the wrist, but is  
25 not necessarily combined with a watch. Primarily it  
will be removed from the wrist when used, for example,  
as a mobile phone. It could remain on the wrist  
during use with the assistance of an earpiece.

30 The mobile communication device is constructed  
having a body that contains the components of the  
device including a viewable display screen. Side  
panels are pivotally attached on either side of the  
body for limited pivotal movement. The panels have a

first position in which they extend outward to form a relatively flat unit with the body. A second position in which the panels extend downward from the body in loose conformity with the users wrist.

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The device is held on the wrist by a flexible band that engages the side panels. A clasp is provided for connection of the flexible band about the wrist. The clasp includes a housing in which the power supply of the device is contained. When the device is removed from the wrist, the band is collapsed and the housing is engaged to the body. The housing engages the side panels to rigidly hold them in the extended flat position. The clasp is removably secured in such engagement by a snap mechanism. The side panels are constructed with appropriate keypads, installed on their upper surfaces, suitable for the application, i.e., mobile telephone, pager, etc. A microphone and earpiece/speaker are constructed in the bottom of the side panels for use in the extended position. In the extended position off the wrist, the device can be used in a substantially normal fashion without the awkward or unusual orientations of combination wrist watch/telephones of the prior art.

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### 30 Description of the Drawing

The invention is described in more detail below with reference to the attached drawing in which:

Figure 1 is a bottom perspective view of the communication device of this invention;

5 Figure 2 is a top perspective view from one side of the communication device of this invention, attached to a wrist;

10 Figure 3 is a top perspective view from another side of the communication device of this invention, attached to a wrist;

15 Figure 4 is a perspective view of the communication device showing its use as a mobile telephone;

Figure 5 is a perspective view of the communication device with the housing partially disengaged; and

20 Figure 6 is a perspective view of the communication device with the housing fully disengaged

#### **Description of the Preferred Embodiment**

25 A mobile communications device 10 is constructed having a generally planar body 1 on which is mounted a display screen 2. The interior of body 1 forms an enclosure to house the components of the device.

30 Display screen 2 may be any suitable display, such as a system of LCD's as is well known. The body 1 is designed in compact shape having dimensions consistent with an average size wrist.

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To complete the assembly, side panels 4 and 5 are constructed to provide supportive surfaces for an appropriate user interface such as keypad 3, buttons and the like. These panels are shaped consistent with the body 1 and having dimensions based on the average size wrist. Side panels 4 and 5 are connected on either side of the body 1 by means of hinges 6 and 7 respectively for limited pivotal motion on the body 1, as shown in figures 5 and 6. The pivotal movement has a first position (figures 1 and 5) in which the panels 4 and 5 extend longitudinally, substantially in the plane of body 1, to form a relatively flat assembly. A second position is provided which allows the side panels 4 and 5 to pivot downward in loose conformity with the users wrist, as shown in figure 2. Movement upwards of side panels 4 and 5 is restricted by hinges 6 and 7.

A flexible band 8 is provided to secure the mobile communications device 10 on the wrist. The flexible band 8 is connected to the body 1 and extends through slotted eyelets 14 constructed in the side panels 4 and 5. In this way the flexible band 8 engages the wrist directly and forms a comfortable surface for contact with the wrist.

A clasp 9 is provided to releasably connect the band 8 around the user's wrist. Clasp 9 is mounted on a housing 11 that forms a container for the power supply of the device. The power supply includes a battery and appropriate connecting circuitry. The power supply may be connected to the components of device 1 by means of flexible leads woven or imbedded

in the band 8. Housing 11 is also sized consistent with a typical wrist.

For general use of the communication device, the device 10 is removed from the wrist and locked in the flat operating arrangement. This is accomplished by collapsing the band 8 and snapping the battery housing 11 into engagement with the body 1 and side panels 4 and 5. When the battery housing 11 is collapsed against the back of mobile communication device 10, a direct connection can be made between the device and the battery. The snap mechanism can be any type of friction fit arrangement that secures the housing 11 in the collapsed position, but allows the user to unsnap the assembly relatively easily to be worn on the wrist. The snap mechanism could be enhance by interacting magnetic parts.

Housing 11 is sized to extent beyond the hinges 6 and 7 and engage the side panels 4 and 5 to force the side panels into a rigid, substantially flat, unit consisting of the body 1, side panels 4 and 5, and battery housing 11. The unit, as shown in figure 4, can be used in the standard manner as a cellular telephone. As shown in figure 1, a microphone and speaker are constructed on the bottom surface of the side panels 4 and 5. The band 8 may be held to the assembled unit by means of magnetic elements.

The upper surfaces 15 and 16 of side panels 4 and 5 respectively are used to support appropriate keypads 3 operatively connected to the components of the device. A microphone 13 and speaker 12 may be constructed in the bottom of the side panels, as shown

in figure 1, for use in the extended position, as shown in figure 4. The device may be adapted for use while secured to the wrist with the addition of a hands free style earpiece accessory (not shown).

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In this manner a communication device, such as a cellular telephone, may be comfortably kept on the wrist in a semi-collapsed state and conveniently removed for use. Upon removable a simple process  
10 assembles the device in a flat rigid unit for use according to normal practice.